REMARKS

Entry of the foregoing and reconsideration of this application are requested. Claims 1, 3, 4, 8, 15, 16 and 17 have been amended, claim 2 has been cancelled, claim 20 has been newly added and claims 1 and 3-20 are now pending in the application.

Enclosed herewith is a revocation of Power of Attorney and a New power of Attorney, along with a Statement under 37 CFR 3.73(b) appointing power to the undersigned.

The conditional allowability of claim 12 is acknowledged upon rewriting of the claim as suggested by the Examiner. Accordingly, new independent claim 20 is the combination of original claims 1, 2, 5, 7, 8, 9 10, 11 and 12.

Claims 16, 18 and 19 have been rejected under 35 USC §102(e) as being anticipated by US Patent no. 6,119,825 to Nisley. Claim 17 has been rejected under 35 USC §103(a) as being unpatentable over Nisley. Claims 1-3, 5-11 and 13-15 have been rejected under 35 USC §103(a) as being unpatentable to Nisley in view of British Patent No. 2155809 to Hartley. Claim 4 has been rejected under 35 USC §103(a) as being unpatentable over Nisley in view of Hartley et al and US Patent No. 4,715,486 to Burgdorf et al. Applicants respectfully traverse the rejections.

The invention relates to a brake assembly for a motor and for use in aerospace applications. As outlined in the specification, where electric motors are used to drive, for examples, hatches or doors, the motors rotate at very high speeds. As the hatch or door approaches the end of its range of movement, it is necessary to rapidly decelerate the rotation of the motor, and this is achieved using a brake. The brake can also be used to hold the door or hatch against movement.

In accordance with the invention, the brake elements of the brake assembly are provided with an applied coating of tungsten carbide raising the coefficient of friction to a value greater than 0.5 This dramatically increases braking efficiency, allowing the number of brake elements used to be reduced and thus allows weight savings to be made.

Claim 1, as amended, incorporates these limitations and others relating to high temperature tolerance.

In accordance with another aspect of the invention as defined in claim 16, the brake elements can be accessed and removed without requiring removal of the actuator winding from the motor. Such an arrangement is advantageous in that servicing and replacement of the brake elements is much simplified.

Claim 16 has now been amended to recite, *inter alia*,

> an actuator winding located such that the brake elements are accessible and removable without requiring removal of the actuator winding.

Applicants have previously asserted in the May 4, 2007 response that Nisley does not teach a winding that is located such that the brake elements are accessible without requiring removal of the winding from the motor. In response, the Examiner in paragraph 9 of the outstanding Office Action, contends that Fig. 3 of Nisley shows that brake elements 46/34/40 are separate from housing 20 which accommodates winding 24. Thus, it appears that removal of post 26 (from motor housing 10) would allow access to the brake elements 46/34/40 as they slide along post 26 leaving housing 20 with winding 24 to remain on the post 26 separate from these brake elements.

However, Nisley teaches that the friction plate 46 is stationary (column 4, lines 44-45). That is, there must be a shoulder or similar structure on the post 26 which prevents movement of friction plate 46 to the left otherwise the spring 30 would continuously urge the plate 46 over the retaining element. Therefore, once the post 26 has been removed from motor housing 10, and elements 44, 48 and 50 are removed from motor 14, nut 32 is removed from post 26 so that housing 20 with winding 24, armature plate 40, friction disk 34 and friction plate 46 can be sequentially removed by sliding these components to the right away from the motor shaft 14.

In the event, nut 32 is removed and the post 26 is pulled to the left in Fig. 3 through the housing 20, brake elements 46, 34, 40 while still dangling about motor shaft

14 might be deemed as somewhat "accessible", such as for inspection purposes. Therefore, claim 16 has been further amended to overcome this interpretation by reciting that the brake elements are accessible and removable without requiring removal of the actuator winding. Clearly, Nisley does not show or suggest such structure as he requires removal of the winding 24 and housing 20 before removal of brake elements 46, 34, 40 may occur. Applicants submit that Nisley does not teach every element of amended claim 16 or claims 17-19 that depend therefrom.

Claim 1 has now been amended to recite, *inter alia*,

> A brake assembly suitable for use in aerospace applications and comprising a stack of brake elements provided with an applied surface coating of tungsten carbide which raises and maintains the coefficient of friction of the brake elements to a value greater than 0.5, and can withstand higher temperatures of about 1000°C generated upon repeated use of the brake assembly.

In rejecting claim 1 and claims dependent therefrom, the Examiner contends that it would have been obvious to one skilled in the art to have provided the brake elements of Nisley with a surface coating that raises the coefficient of friction of the brake elements to the claimed values taught by Hartley to increase overall performance of the brake assembly.

Nisley describes a motor brake, but not one intended for use in aerospace applications, and there is no disclosure or suggestion that the friction disk 34 thereof should be provided with a tungsten carbide coating to raise the coefficient of friction to a value greater than 0.5. The Examiner has argued that Hartley discloses the provision of a surface coating to the brake elements to raise the coefficient of friction thereof. Although this is true, Hartley, like Nisley, does not relate to aerospace applications and does not mention the use of tungsten carbide. Further, it should be noted that Hartley is only describing achieving a temporary increase in the coefficient of friction during an initial bedding process. As a consequence, this teaching would not be looked at when developing a component for use in the aerospace applications in which the increase in the

coefficient of friction must be maintained for a significant period of time. Nowhere does Hartley mention application of tungsten carbide coating which will withstand high temperatures of about 1000°C generated during repeated use of the brake assembly.

The Examiner has further relied upon Burgdorf for constructing the surface coating of Nisley modified by Hartley with tungsten carbide so that the braking element can be formed of a more wear resistant material. Burgdorf again is not aerospace related. More importantly, although Burgdorf mentions the use of tungsten carbide, there is no suggestion that a tungsten carbide coating can achieve the increase in coefficient of friction to a value greater than 0.5, and withstand 1000°C temperatures during repeated use of the brake assembly. As previously submitted to the Examiner in the May 4, 2007 response, Burgdorf is pertinent to wear reduction, not increasing the coefficient of friction. As such, applicants submit that the proposed combination of Nisley, Hartley and Burgdorf fails to prove that the subject matter of claim 1 and claims dependent therefrom is obvious to one skilled in the art.

It is submitted that the rejections are overcome as based on the above arguments.

Accordingly, the Examiner is requested to withdraw the rejections and pass this application to issue with claims 1 and 3-20 being deemed allowable.

Respectfully submitted,

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